REMR MATERIAL DATA SHEET CM-SE-1.19
CONCRETE SEALER: CRYSTAL SEAL

1. NAME

Crystal Seal

2. MANUFACTURER

Cordyne Industrial Corporation
9725 SW Commerce Circle
Wilsonville, OR 97070
Telephone: 503-682-2898

3. DESCRIPTION

A crystalling silicate, Crystal Seal is a proprietary, aqueous blend of sodium silicates, penetrating aids, and defoamers specially formulated for application by high-velocity spray.

4. USES & LIMITATIONS

Uses: Crystal Seal may be sprayed on fresh concrete as a cure and on all concrete for sealing, hardening, waterproofing, weatherproofing, acid-proofing, and oilproofing. It protects concrete surfaces from abrasion, chemical corrosion, and freeze-thaw damage and stops water seepage where it is not caused by cracking or other structure failure. Crystal Seal penetrates deeply into the capillary pores of the concrete. Reacting there with free lime and carbonates, it crystallizes to become part of the concrete itself.

Limitations: Crystal Seal should not be applied to concrete surfaces that have been otherwise coated or oiled. If water will not be absorbed into the surface, it must be cleaned before Crystal Seal is applied. Crystal Seal should not be sprayed on glass or aluminum. Any compound accidentally sprayed on glass or aluminum should be washed off immediately. Tilt-up slabs or other preformed units treated with Crystal Seal and stacked in contact with one another may be bonded together unless a bond breaker is applied.

Crystal Seal should not be applied when the ambient temperature is at or below freezing. Although it may be applied to damp concrete surfaces, it should not be applied where rain or other water is running over the surface or where puddles of water are on the surface.

5. MANUFACTURER'S TECHNICAL DATA

Packaging: 55-gal drum with a shipping weight of 600 lb.

Shelf life: Shelf life is indefinite and is not affected by freezing or extremes of heat and humidity. If frozen, the compound should be thawed completely before use. It should always be stirred thoroughly before use.

Reaction time: Crystallization is mostly complete within 24 hr, but may continue slowly for some time.

Test results: Crystal Seal has been tested as a chemical hardener by the Schmidt hammer rebound method with the following results:

Type of Concrete or Treatment	Compressive Strength psi
10-year-old slab	
untreated	2,000
after one coat	3,000
after two coats	4,600
Newly laid, cured slab	
before	4,900
after one coat	6,000
Armor coat slab	
before	7,000
after one coat	7,400

Warranty: Crystal Seal is warranted to cure, seal, harden, waterproof, acidproof, weatherproof, dustproof, and oilproof concrete, brickwork, and masonry stone to which it has been properly applied by applicators trained and licensed by the manufacturer or distributor. This warranty does not extend to structural defects in or to the material to which Crystal Seal is applied. There are no guarantees, either expressed or implied, which extend beyond the description in this paragraph.

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface preparation:

Crystal Seal is applied to green concrete as soon as the surface water sheen has disappeared and the concrete can be walked upon. On vertical, formed surfaces, Crystal Seal is applied as soon as the forms have been stripped and the surface rubbed, if required.

For application to old concrete, surfaces to be treated should be swept or brushed clean and then tested by sprinkling water on them. If the water drops bead up and are not readily absorbed by the concrete, the surface has been coated previously by an organic coating that must be removed. Likewise, any oil or other stains must be removed before applying Crystal Seal. The surface should be washed with a strong stripper such as a 7:1 solution of muriatic acid or a strong detergent such as trisodium phosphate. It should be rinsed thoroughly with water, and excess water should be removed with a squeegee. It is not necessary to dry the surface before applying Crystal Seal, but puddled water must be removed.

Application:

Coverage: Crystal Seal is applied at the rate of 200 sq ft/gal (5 m^2/ℓ) per coat. One coat is used for curing fresh concrete, waterproofing new concrete, weatherproofing, and dustproofing. Two coats, 24 hr apart, are applied for waterproofing old concrete, for chemical hardening, and for weatherproofing brick. Three coats are applied for acidproofing and oilproofing concrete and for weatherproofing concrete block.

Suggested treatment schedules for various applications:

Application, Purpose of Coating	No. of Coats
Curing of fresh concrete	1
Dustproofing	1
Waterproofing new concrete	1
Weatherproofing concrete	1
Waterproofing aged concrete	2
Chemical hardening	2
Weatherproofing brick	2
Weatherproofing block	3
Acidproofing, oilproofing	3

7. CORPS OF ENGINEERS' EVALUATION

Physical and mechanical properties:

Percent solid (ASTM D 1644, Method A): 11.0%

Percent water absorption (ambient temperature) (ASTM C 642):

1 day	4.34%
2 days	4.40%
4 days	4.46%
7 days	4.51%

Ratio of percent water absorption for treated to nontreated specimen (2-day submersion): 94.0%

8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of sealant activities involving potentially hazardous and toxic chemical substances. Manufacturer's recommendations to protect occupational health and environmental quality should be carefully followed. Material safety data sheets should be obtained from the manufacturers of such materials. In cases where the effects of a chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated as potentially hazardous toxic materials.

9. AVAILABILITY & COST

Availability: Available from the manufacturer or authorized local distributors.

Cost: Costs are available from local distributors.

10. TECHNICAL SERVICE

Technical services regarding application, performance, and special problems are available from the manufacturer's technical staffs and professional consultants.